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ABSTRACT

A study was conducted to identify operational procedures that could maximize learning and acceptance of reading materials within a parent education program. A factorial design was used to test how two levels of readability of written material (ninth and fifteenth grade levels) and two levels of reader competency (lower and higher) were related to the learning of subjects. Twenty-eight upper-middle class women enrolled in a parent education program served as subjects. Results indicated that the lowest number of errors was made by lower competency readers receiving lower readability level materials. The second lowest number of errors was made by higher competency readers receiving higher readability level materials. The highest number of errors was made by lower competency readers receiving higher level materials. What was not expected was that the second highest number of errors was made by higher competency readers receiving lower level materials, indicating that more learning took place when reading materials were matched with readers' skill level. (HOD)

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THE USE OF READING MATERIALS WITHIN A PARENT EDUCATION PROGRAM

By

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Introduction

Reading materials are seldom used as a method of introducing topics for group discussion in the parent education programs familiar to the researcher. However, films and resource persons are used for this same introductory purpose. The researcher raised the question of how reading materials, so prevalent and inexpensive, could be used more effectively as a means of introducing a topic in a parent education setting.

A search of the parent education literature revealed two conflicting attitudes toward the use of reading materials in parent education. A survey by Gotts and Associates (1977) indicated that parents preferred reading about childrearing over nine other methods of learning about the parenting role. In contrast, a review of textbooks by leading parent educators writing to advise leaders of parent education programs found no mention of using reading materials as a method of introducing a topic (Pickarts & Fargo, 1971 and Augerbach, 1969). It is believed that the effective use of reading materials has not been researched sufficiently to give parent educators enough information about how to operationalize reading effectively.

The use of reading materials in parent education programs has not been systematically studied since 1934 when Ojemann (1934) found that the reading materials being used in parent education programs were too difficult for the average reader. Ojemann also isolated 14 variables within the written materials that accounted for reading difficulty. Subsequently, these reading difficulty factors were incorporated into the field of research called readability.

Readability refers to

> ...the sum total (including the interactions) of all those elements within a given piece of printed material that affect the success that a group of readers have with it. The success is the extent to which they understand it, read it at an optimum speed, and find it interesting. (Chall, 1958)

Since Ojemann's study in 1934 the literature on readability has grown in both sophistication and volume. In an effort to synthesize a part of the readability literature Klare (1976) analyzed 36 studies that used reading comprehension (i.e., learning) as the dependent variable. He identified a total of 28 variables associated with reading comprehension. He organized these 28 variables into a model of reader performance.

The reader performance model proposed by Klare posits that five factors and their interactions were responsible for reader performance. The five factors were: (1) the test situation, (2) reader competence, (3) content of material, (4) readability level of material, and (5) reader motivation. The Klare model is illustrated in Figure 1.

The Klare model suggested a means of testing how the readability of material and the competency of the reader were related to reading comprehension when the content of the material, the test situation, and the reader's motivation were held constant. The purpose of the

study was to begin to identify operational procedures that could maximize learning and acceptance of reading materials within a parent education program.

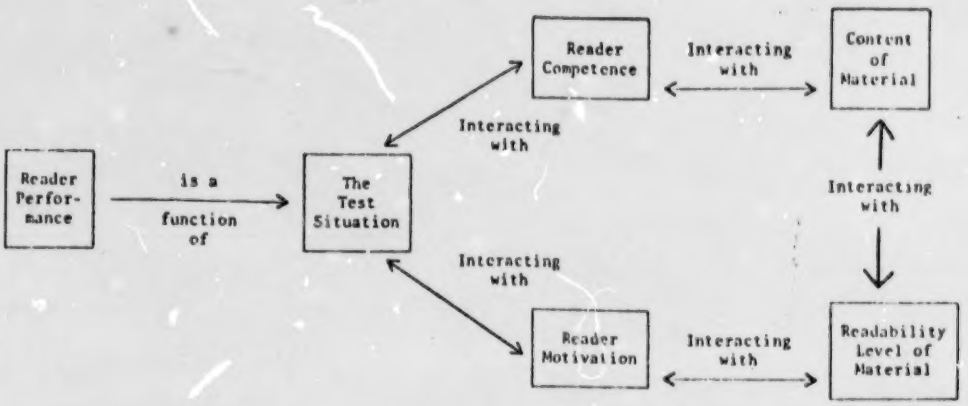

Figure 1

Klare's Reader Performance Model

The following hypotheses were tested:

(1) There will be significantly greater comprehension of reading material recorded by subjects receiving lower readability materials than by subjects receiving higher readability materials.

(2) There will be significantly greater comprehension of reading materials recorded by subjects scoring higher on a test of reading competency than by subjects scoring lower on a test of reading competency.

(3) There will be a significant ordinal interaction such that subjects with lower reading competency will make less errors on the measure of comprehension with lower readability materials than with higher readability materials and that subjects with higher reading competency will make approximately the same number of errors on the measure of comprehension under both readability conditions (See Figure 2).

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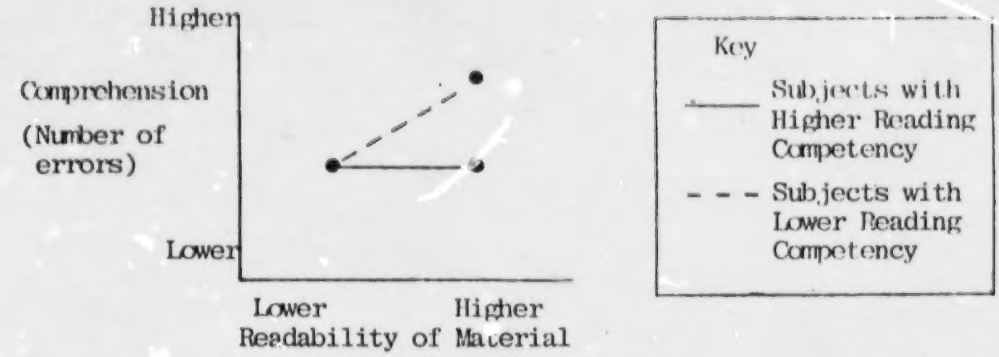

Figure 2

Expected Ordinal Interaction

Research Design

A 2 X 2 factorial design was used to test how two levels of readability of written material (ninth and fifteenth grade levels) and two levels of reader competency (lower and higher) were related to the comprehension (i.e., learning) of subjects. The lower and higher reading competency groups were formed by locating the median point on a reading test given to the subjects.

The dependent variable of the analysis was the number of errors the subjects made on a test of comprehension designed to cover the major concepts of the written materials.

Instruments

The comprehension instrument was a 32 item multiple choice test that had been previously tested to determine (1) that it accurately measured the concepts within both reading materials and (2) was internally consistent (a Kuder-Richardson 20 had established the internal consistency among the items of the test to be 0.80).

The readability levels of written materials were determined by using the Flesch Reading Ease formula (Flesch, 1948). The content of the reading material had been tested and found to be similar for both levels of readability (Abram, 1978).

The reading competency of the subjects was tested with a cloze procedure that replaced every fifth word in a 250 word passage with a blank. The readers were asked to fill in the blanks as best they could. The cloze passage was scored as the percent of exact words replaced. The cloze procedure has been found to be highly correlated with major reading tests (Bickley et. al., 1970).

The Sample

Twenty-eight upper-middle class women enrolled in an on-going parent education program served as the subjects of the experiment.

The women (1) were between 25 and 43 years of age, (2) were mothers of one to three children, (3) had educational levels between high school and graduate work, and (4) were married. The women had met weekly for six months prior to data collection.

Procedure

The two levels of reading materials (ninth and fifteenth grade) were randomly distributed to the women assembled for an on-going parent education class. The reading materials looked similar and were distributed with the same cover page. Each woman was asked to take a copy and read the material as an introduction to the discussion that would follow. The women were not told that they would be tested until after the reading was completed. The women were given six minutes to read the four-and-one-half pages of materials and given approximately 20 minutes to complete the post-test procedures.

Findings

A 2 x 2 analysis of variance was calculated on the data. F tests for both main effects and interaction did not reach significance. Table 1 summarizes this analysis.

Table 1

Analysis of Variance Summary Table Contrasting Two Levels of Reading Materials and Two Levels of Reading Competency Using Women's Comprehension Scores (Number of Errors) as the Dependent Variable

Source	SS	df	MS	F	p
Reading Material	0.958	1	0.958	0.089	0.77
Reading Competency	0.985	1	0.985	0.091	0.77
Interaction	22.644	1	22.644	2.098	0.16
Error	259.085	24	10.795		
Total	284.000	27			

An inspection of the cell means (see Table 2) showed that three of the four cells were in the expected direction. The lowest number of errors (4.80) were made by lower readers receiving lower reading materials. The second lowest number of errors (5.14) were made by higher readers receiving higher reading materials. The highest number of errors (7.29) were made for lower readers receiving higher materials. These findings were expected. What was not expected was that the second highest number of errors (6.33) were made by higher readers receiving lower reading materials.

Table 2

Means, Standard Deviations, and n's When Two Levels of Readability and Two Levels of Reading Competency are Contrasted Using Number of Errors on a Test of Comprehension as the Dependent Variable

Reading Material	Reading Competency		
	Lower	Higher	
Lower (Ninth Grade)	4.80 (2.39) n = 5	6.33 (3.81) n = 9	5.79 (3.36) n = 14
Higher (Fifteenth Grade)	7.29 (3.45) n = 7	5.14 (2.85) n = 7	6.21 (3.24) n = 14
	6.25 (3.19) n = 12	5.81 (3.37) n = 16	6.00 (3.24) n = 28

Figure 3 graphs the obtained cell means. As can be seen, the ordinal interaction hypothesized was not supported by the data. Rather, a disordinal interaction was obtained.

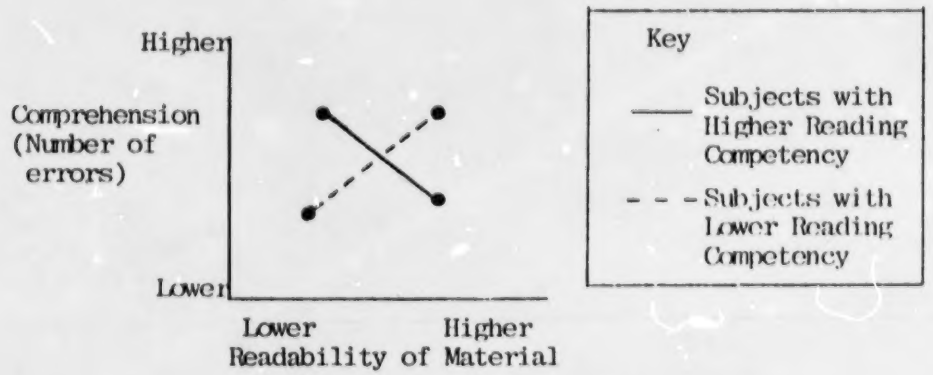

Figure 3

Actual Interaction Obtained

Discussion and Use of the Study

The small number of subjects in this experiment was believed to be responsible for the lack of significance recorded for the interaction between readability of material and ready competency of subject. Consequently, the means of the four cells appear to be worthy of discussion. The pattern of cell means appears to indicate that more learning took place when reading materials were matched with readers' skill level. Conversely, lower learning appeared to take place with overly simplified or overly difficult materials. This disordinal interaction is curious insofar as the literature search had repeatedly talked to an increase in errors with overly difficult materials but nowhere stated that overly simplified materials might also decrease learning.

As a result of both the literature search and the results of this study, the following steps are suggested to operationalize the use of reading materials with a parent education program.

(1) Measure the readability of all written materials being considered for use as an introduction to a discussion in a parent education program. It is suggested that either the Dale-Chall formula or the Flesch Reading Ease formula be used (Dale and Chall, 1948 and Flesch, 1948). Both formulas are easily learned and can be applied rather quickly to existing written materials.

(2) Attempt to get some indication of the skill of the readers in the parent education program. Often the parent educator has some prior knowledge of the span of educational attainment of the class. Educational level is a rough index of reading skill (Klare, Note 2). An actual reading test would be more informative than educational

attainment but might prove offensive to the group. A third method of determining an appropriate reading level would be to use one's own judgment regarding the initial choice of readability material for a group and then to ask for feedback on its level of difficulty. The development of materials in the future could be based on this feedback.

(3) Match the readability of the written material with the reading skill of the reader. This might be accomplished through locating reading materials already written at the desired level of readability or through a rewrite of existing materials to the desired level of readability. An excellent manual is available to help the parent educator learn the skill of rewriting materials to a variety of levels of readability (Klare, Note 1).

(4) Where feasible, rewrite the reading materials at more than one level of readability to allow for a variety of reading skills within the group. The manual mentioned in three above will prove helpful in accomplishing the rewriting.

(5) Allow parents to choose the level of readability they wish. Materials might be labeled "original" and "revised" or some other label that would not create resentment by implying easier and more difficult reading. The readability literature indicates that over time persons will choose the level of reading that is most comfortable for them.

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